CLAIMS:

1. Recording apparatus for recording data on a record carrier by irradiating said record carrier by a focused radiation beam having a radiation power, said apparatus comprising:

- means (10) for generating said focused radiation beam;
- first prediction means (20, 24) for predicting a first control parameter indicating a radiation power variation required to compensate for a non-homogeneity of said record carrier, as a function of a recording position;
- second prediction means (30) for predicting a second control parameter indicating a temperature-dependency of said radiation power; and
- power control means (10) for controlling said radiation power in dependence on said first and second control parameters.

2. An apparatus according to claim 1, wherein said first prediction means (20, 24) is arranged to predict said control parameter based on a learning mechanism.

3. An apparatus according to claim 2, wherein said first prediction means (20, 24) comprises a memory means (20) for storing a table of radiation power values as a function of said recording position.

4. An apparatus according to claim 2 or 3, wherein said first prediction means (20, 24) comprises approximation means (24) for performing a regression operation based on values obtained from said learning mechanism.

5. An apparatus according to claim 4, wherein said first prediction means (20, 24) is arranged to use coefficients obtained from said regression operation for predicting said first control parameter.

6. An apparatus according to any one of the preceding claims, wherein said second prediction means (30) is arranged to calculate said second control parameter based on

a measured laser temperature supply from a temperature sensor (32) and a predetermined control information indicating a normalized radiation power dependency with respect to a radiation wavelength.

7. An apparatus according to claim 6, further comprising reading means (10) for reading said predetermined control information from said record carrier.

8. An apparatus according to any one of the preceding claims, further comprising calculation means (30) for calculating a laser power control value based on the following equation:

$$(\alpha)_{Ns_x} = \left[1 + K_t \cdot (T_n - T_{opc}) \cdot \frac{K_{\lambda(Nx)}}{\lambda_{ind}}\right] \cdot (\alpha_{OPC})_{Topc} + \left[(\Delta\alpha)_{\Delta\beta}\right]_{Ns_x}$$

9. An apparatus according to any one of the preceding claims, wherein said recording apparatus is an optical disc recorder.

10. A power control method for controlling a radiation power of a radiation beam used for recording data on a record carrier, said method comprising the steps of:

- predicting a first control parameter indicating a radiation power variation required to compensate for a non-homogeneity of said record carrier, as a function of a recording position;
- predicting a second control parameter indicating a temperature dependency of said radiation power; and
- controlling said radiation power in dependence on said first and second control parameters.

11. A record carrier having a recording layer for recording data by irradiating the recording layer by a focused radiation beam having a radiation power, said record carrier comprising a control area storing a control parameter which indicates a required temperature dependency of said radiation power.

12. A record carrier as claimed in claim 11, wherein said control parameter indicates a normalized laser power dependency with respect to wavelength.

13. A record carrier as claimed in claim 11 or 12, wherein said control area comprises a pre-groove of said record carrier.